

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing of claims in the application.

1. (Previously presented) A method for improving the wavelength dependent registration of digital images, said method comprising the steps of:

(a) detecting a similar feature in two or more digital records of the same original search digital image being wavelength-dependent, said digital records each having two dimensions;

(b) determining from the feature a shift due to misregistration of at least one of the digital records relative to another of the digital records; and

(c) processing at least one of said digital records with a two-dimensional digital filter independently of the other said digital records, said digital filter having a phase response that compensates for the shift, thereby providing a correction for the wavelength-dependent misregistration between the digital records.

2. (Original) A method as claimed in claim 1 wherein step (a) comprises detecting a graphical element in each of the digital records.

3. (Original) A method as claimed in claim 2 wherein step (b) comprises computing a centroid of the graphical element.

4. (Original) A method as claimed in claim 1 wherein step (a) comprises detecting an edge feature in each of the digital records.

5. (Original) A method as claimed in claim 4 wherein step (a) further comprises elements of the spatial frequency response method for a slanted edge feature according to the ISO 12233 standard.

6. (Original) A method as claimed in claim 4 wherein step (b) comprises computing a difference in pixel location of the feature located in said at least one digital record relative to the same feature located in said another of the digital records.

7. (Original) A method as claimed in claim 1 wherein step (c) comprises processing the digital records with an FIR filter having an asymmetric response represented by a set of filter coefficients.

8. (Previously presented) A method as claimed in claim 7 wherein step (c) comprises using a set of precalculated coefficients selected from a plurality of sets of precalculated coefficients for various pixel shifts.

9. (Original) A method as claimed in claim 1 wherein step (c) comprises processing said at least one of the digital records with digital filter having a magnitude response that compensates for an aspect of the digital records other than misregistration.

10. (Original) A method as claimed in claim 1 wherein the digital filter in step (c) is obtained by convolving a first digital filter having a phase response that compensates for the shift with a second digital filter having a magnitude response that compensates for an aspect of the digital records other than the shift.

11. (Original) A method as claimed in claim 10 wherein the second digital filter in step (c) enhances the sharpness of, or blurs the one or more of the digital records.

12. (Original) A method as claimed in claim 1 wherein the digital records are red, green and blue records.

13. (Original) A method as claimed in claim 12 wherein said another of the records in step (b) is the green color record and the red and blue color records are filtered in step (c) to correct for color misregistration between the red and blue color records and the green color record.

14. (Previously presented) A computer program product for improving the color registration of digital images comprising: a computer

readable storage medium having a computer program stored thereon for performing the steps of:

(a) detecting a similar feature in two or more digital color records of the same digital image of a scene, said digital records each having two dimensions;

(b) determining from the feature a shift due to misregistration of at least one of the digital color records relative to another of the digital color records; and

(c) processing at least one of said digital color records with a two-dimensional digital filter independently of the other said digital records, said digital filter having a phase response that compensates for the shift, thereby providing a correction for the color misregistration between the digital color records.

15. (Original) A computer program product as claimed in claim 14 wherein step (a) comprises detecting a graphical element in each of the digital records.

16. (Original) A computer program product as claimed in claim 15 wherein step (b) comprises computing a centroid of the graphical element.

17. (Original) A computer program product as claimed in claim 14 wherein step (a) comprises detecting an edge feature in each of the digital color records.

18. (Original) A computer program product as claimed in claim 17 wherein step (a) further comprises evaluating the location of a slanted edge feature according to the ISO 12233 standard.

19. (Original) A computer program product as claimed in claim 17 wherein step (b) comprises computing a difference in pixel location of the feature located in said at least one digital color record relative to the same feature located in said another of the digital color records.

20. (Original) A computer program product as claimed in claim 14 wherein step (c) comprises processing the digital color records with an FIR filter not constrained to a symmetrical array, represented by a set of filter coefficients.

21. (Original) A computer program product as claimed in claim 20 wherein step (c) comprises using a set of precalculated coefficients selected from a plurality of sets precalculated for various pixel shifts.

22. (Original) A computer program product as claimed in claim 14 wherein step (c) comprises processing said at least one of the digital color records with digital filter having a magnitude response that compensates for an aspect of the digital color records other than misregistration.

23. (Original) A computer program product as claimed in claim 14 wherein the digital filter in step (c) is obtained by convolving a first digital filter having a phase response that compensates for the shift with a second digital filter having a magnitude response that compensates for an aspect of the digital color records other than the shift.

24. (Previously presented) A method for improving the wavelength dependent registration of digital images, said method comprising the steps of:

(a) detecting an edge feature in two or more digital records of the same original search digital record being wavelength-dependent, using elements of the spatial frequency response method for a slanted edge feature according to the ISO 12233 standard;

(b) determining from the feature a shift due to misregistration of at least one of the digital records relative to another of the digital records; and

(c) processing said at least one of the digital records with a digital filter having a phase response that compensates for the shift, thereby providing a correction for the wavelength-dependent misregistration between the digital records.

25. (Previously presented) A computer program product for improving the color registration of digital images comprising: a computer readable storage medium having a computer program stored thereon for performing the steps of:

(a) detecting an edge feature in two or more digital color records of the same scene, and evaluating the location of a slanted edge feature according to the ISO 12233 standard;

(b) determining from the feature a shift due to misregistration of at least one of the digital color records relative to another of the digital color records; and

(c) processing said at least one of the digital color records with a digital filter having a phase response that compensates for the shift, thereby providing a correction for the color misregistration between the digital color records.

26. (Previously presented) The method of Claim 1 wherein said processing further comprises convolving and said digital filter is a finite impulse response filter.

27. (Previously presented) The method of Claim 1 wherein said determining further comprises estimating an edge location and edge direction of said feature.

28. (Cancelled) The method of Claim 27 wherein said edge direction is slanted relative to said two dimensions of the respective said digital record.

29. (Cancelled) The method of Claim 1 wherein said determining further comprises:

computing a first derivative of said feature using a derivative filter to define one or more lines;

computing a centroid of each of said lines; and

fitting a linear equation to each said centroid.

30. (Previously presented) A method for improving the wavelength dependent registration of digital images, said method comprising the steps of:

(a) detecting a similar feature in two or more digital records of the same original search digital image being wavelength-dependent, said digital records each having two dimensions;

(b) determining from the feature a shift due to misregistration of at least one of the digital records relative to another of the digital records; and

(c) processing at least one of said digital records with a two-dimensional digital filter, said digital filter having a phase response that compensates for the shift, thereby providing a correction for the wavelength-dependent misregistration between the digital records;

wherein said determining further comprises estimating an edge location and edge direction of said feature, said edge direction being slanted relative to said two dimensions of the respective said digital record.

31. (Currently Amended) The method of Claim + 30 wherein said processing further comprises convolving and said digital filter is a finite impulse response filter.

32. (New) A method for improving the wavelength dependent registration of digital images, said method comprising the steps of:

(a) detecting a similar feature in two or more digital records of the same original search digital image being wavelength-dependent, said digital records each having two dimensions;

(b) determining from the feature a shift due to misregistration of at least one of the digital records relative to another of the digital records; and

(c) processing at least one of said digital records with a two-dimensional digital filter independently of the other said digital records, said digital filter having a phase response that compensates for the shift, thereby providing a correction for the wavelength-dependent misregistration between the digital records;

wherein said determining further comprises estimating an edge location and edge direction of said feature, and wherein said edge direction is slanted relative to said two dimensions of the respective said digital record.

33. (New) A method for improving the wavelength dependent registration of digital images, said method comprising the steps of:

(a) detecting a similar feature in two or more digital records of the same original search digital image being wavelength-dependent, said digital records each having two dimensions;

(b) determining from the feature a shift due to misregistration of at least one of the digital records relative to another of the digital records; and

(c) processing at least one of said digital records with a two-dimensional digital filter independently of the other said digital records, said digital filter having a phase response that compensates for the shift, thereby providing a correction for the wavelength-dependent misregistration between the digital records;

wherein said determining further comprises:

computing a first derivative of said feature using a derivative filter to define one or more lines;

computing a centroid of each of said lines; and

fitting a linear equation to each said centroid.

34.(New) The method of claim 1, wherein said feature is a registration feature.

35.(New) The method of claim 1, wherein said feature is a neutral registration feature.

36.(New) The method of claim 1, wherein said feature is a slanted edge registration feature.

37.(New) The method of claim 36, wherein said slanted edge has a moderate to sharp transition on the scale at which the image sampling is to be applied.